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ABSTRACT

Following up on the previous year's study of first graders, this report describes a study of intervention at the second grade level in 73 North York, Ontario, public schools. Post-test data from the end of the first grade year were used to identify 417 pupils in need of special assistance in second grade. Post-testing was conducted near the end of the second school year, through the North York Intermediate Self Concept Inventory and the Metropolitan Achievement Test Primary II reading comprehension subtest. Data were collected for 206 of the 417 pupils identified for intervention. Results indicate that pupils identified for intervention in both years on the average showed a small improvement in their reading scores from 1st to 2nd grade, as well as in their self-concept scores over the course of the year. Although gains were small, it seems that pupils benefited from continued assistance in 1st through 2nd grade. Those pupils, however, who were not identified until the beginning of 2nd grade did not benefit as much. Pupils identified in 1st grade who showed sufficient improvement that they were not identified for 2nd grade maintained their performance in reading, but showed a slight decline in self-concept scores over the course of the second year. (BF)

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INTERVENTION

AT THE GRADE TWO LEVEL

1974 - 1975

Patricia Crawford

October, 1975

PS 008867

The following North York staff undertook responsibility for various aspects of Intervention during 1974 - 75.

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Mary Donovan	-	Program Leader, Generalist for Emery Family, Gulfstream Centre. 742-3220.
Priscilla Galloway	-	Program Leader, Armour Heights Centre. 481- 2141.
Marguerite Jackson	-	Program Leader, Lamberton Centre. 638-5455.
Bill Knowles	-	Principal, Lamberton Public School. 638-1303.
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Philosophy of Intervention

Too often the conventional school program demands, through its presentation of academic material, that the child use skills which he has never developed, or build on experiences that he has never had, or utilize concepts yet unestablished.

Further, in terms of social skills, there are often discrepancies between skills that the school program demands and the skills that a particular child has acquired. There is considerable evidence that pupils are unlikely to achieve competence in school if they do not have a healthy self-concept or are unable to have effective relationships with both peers and adults.

Such factors as the child's age, language experiences, development of social and academic activities upon entry to school, bear heavily on the likelihood of initial school success.

Consequently, the early identification of children who are most likely to experience limited success in the present school program is considered an important goal by both educators and parents. The question facing schools, therefore, is

> What can we do to improve the chances of school success for pupils identified as likely to experience difficulties?

The answer, though not easily attained, is that schools can intervene with such identified pupils by utilizing available human and material resources to provide appropriate learning experiences for the individual child. The purpose of this intervention process is to prevent potential learning difficulties from becoming actual learning problems.

Intervention is not a packaged program. It is an on-going process aimed at individualization of learning for children at the earliest possible stage of their school careers. It is a process that focuses on social and academic learning of children and one that concerns itself with the growth of individuals.

Background of Intervention

Pilot Study:

During the 1972 - 73 school year, an experimental intervention process was initiated on a pilot basis in 16 North York Grade 1 classrooms. Pupils who were hypothesized as likely to experience limited school success were identified by means of (a) Kindergarten Teacher ratings, (b) their performance on the Reading and Numbers subtests of the Metropolitan Achievement Test, and (c) a self concept inventory.

To assist the teacher in providing assistance for these pupils, volunteers were recruited from a variety of sources, e.g. parents, university students, Teachers' College students, and Grade 6 pupils. Each teacher, with the assistance of the Principal, organized her own program. Consequently, volunteers were used in a variety of ways.

Post-testing on the achievement and self concept tests was carried out in May, 1973, and gain scores were calculated for both identified and non-identified pupils to determine the extent of growth. The identified pupils showed greater than expected gains on both numbers and self concept, and met the expectation on the reading subtest. The non-identified pupils made greater than expected gains on self concept and reading.

At the request of the Assistant Director of Education, these results were made available to all elementary principals throughout the Borough early in September, 1973 and as a consequence 73 elementary schools elected to participate in Intervention during 1973 - 1974.

Intervention, 1973 - 1974*

Approximately 4000 Grade 1 pupils were tested in the Fall of 1973 using the Reading and Numbers subtests of the M.A.T. Primer and the North York Primary Self Concept Inventory. In addition, the kindergarten teachers were asked to rate these pupils on a five point scale in terms of:

1. Pupils' expected achievement in Grade 1.
2. Likelihood of the pupil experiencing social difficulties in Grade 1.

Five hundred and ninety-five pupils (or 15%) were identified as likely to benefit from additional assistance. The results for each class plus a list of identified pupils indicating their areas of weakness were fed back to the Grade 1 teachers during October/November. As in the pilot study, volunteers, i.e. parents, university students, community college students and other pupils within the school assisted the teachers in the classroom.

Post-testing on these measures occurred during April, 1974 and gain scores were calculated on each measure for both identified and non-identified pupils. The identified pupils exceeded the expected gains in both reading and numbers and also made gains in self concept. The non-identified pupils also showed gains on both measures of academic

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* Crawford, Patricia & Virgin, A.E. "An Interim Report of the Grade 1 Intervention Program, 1973 - 74", May, 1974.

Virgin, A.E. & Crawford, Patricia "A Study of Kindergarten Teachers' Predictions Of Their Pupils' Subsequent Performance and the Effects of an Intervention Program at the Grade 1 Level". December, 1974.

achievement and maintained their relatively high self concept scores over the year. As in the fall, a feedback report was prepared and delivered to each participating Grade 1 teacher. This concluded the evaluation of Intervention at the Grade 1 level.

During the 1974 - 75 school year, Intervention was considered as part of the school's program at Grade 1 and continued as a research study at the Grade 2 level. This is a report of the results at Grade 2.

METHOD

Sample and Procedure

The sample included those pupils in the 73 elementary schools who had participated in the study of Intervention at the Grade 1 level.

The post-test data, gathered in Spring, 1974 at the end of Grade 1, were used as a basis for identifying pupils for the Grade 2 program. A pupil was identified as in need of additional assistance if his/her scores were:

(a) one standard deviation or more below his school average on two of the three measures of achievement, i.e. M.A.T. Reading, M.A.T. Numbers and Grade 1 Teacher Rating of Achievement,

and

(b) one standard deviation or more below his school average on one of the two social measures, i.e. Self Concept Inventory and Grade 1 Teacher Rating of Social Difficulties,

Using these criteria, 417 pupils were selected as needing some additional assistance at the Grade 2 level.

A report was prepared for each school listing

(a) those pupils originally identified at the beginning of Grade 1 plus whether or not they were identified for the Grade 2 program

(b) those pupils, not identified in Grade 1, but who were considered as in need of additional assistance in Grade 2 and so were identified for the Grade 2 program.

In September 1974 these reports were taken to each school by a member of the Intervention Committee and shared with the Grade 2 teachers. The teachers were encouraged to plan individual activities for the identified children and to use volunteers in their program if they felt they could be of assistance.

No pre-testing was conducted in the Fall, 1974; post-testing was conducted during the first two weeks of May, 1975. One testing session was scheduled for each class during which pupils completed the North York Intermediate Self Concept Inventory and the Reading Comprehension subtest of the Metropolitan Achievement Test, Primary II, Form F. All testing was conducted by Research Services personnel with the assistance of the classroom teacher. The test booklets were returned to Educational Research Services for scoring and analysis.

In June, teachers received a feedback report which included the post-test scores on each of the two measures for each pupil plus the class average on each measure.

RESULTS *

As indicated in the procedure section, 417 pupils were identified for intervention at the beginning of Grade 2. However, as data were collected for only 206 of these pupils at the end of Grade 2, the question was raised as to the whereabouts of the remaining 211. The following are the findings:

	Number of Pupils	Expressed as a % of the 417 pupils identified at the beginning of Grade 2
Left North York system	78	19
Registered in Grade 1 during 1974 - 75	49	12
Absent from school on day of testing	40	10
Moved to another school	29	7
Registered in Primary Special Education	11	3
Registered in Grade 3	3	1
Registered in S.L.D. perceptual	1	2

* I would like to acknowledge the assistance of Mr. Frank Blum in analyzing the data.

It is interesting to note that 49 or 12% of the pupils identified for the Grade 2 program in fact did not enter Grade 2 in September, 1974 but remained in Grade 1 for a second year. Very early in their school careers, therefore, they have already begun to experience limited success!

Before discussing the results for reading and self concept, let me briefly describe the remaining 206 identified pupils in terms of their sex, their birth quarter and whether or not they were previously identified in Grade 1.

Sex

As shown in Table 1, 61% of the identified pupils were boys and 39% girls, while among the non-identified pupils there was an equal distribution of boys and girls, as you would expect.

TABLE 1

PERCENT BOYS AND GIRLS

	Boys	Girls
Identified	61	39
Non-Identified	50	50

Birth Quarter

Table 2 shows the percent of identified and non-identified pupils born in each quarter of the year.

TABLE 2

PERCENT OF IDENTIFIED AND NON-IDENTIFIED PUPILS BORN IN EACH QUARTER OF THE YEAR

	January - March	April - June	July - September	October - December
Identified	18	19	26	37
Non-Identified	24	25	24	26

Among the non-identified pupils, as you would expect, approximately 25% of the sample were born during each quarter of the year. However, among the identified pupils, there is a tendency for fewer pupils than expected to be born during the first two quarters, and more than expected to be born during the last two quarters, particularly October - December. Therefore, as was the case in Grade 1, pupils who are boys and who are young, i.e. born during October - December, are somewhat more likely to be identified.

Identification Group

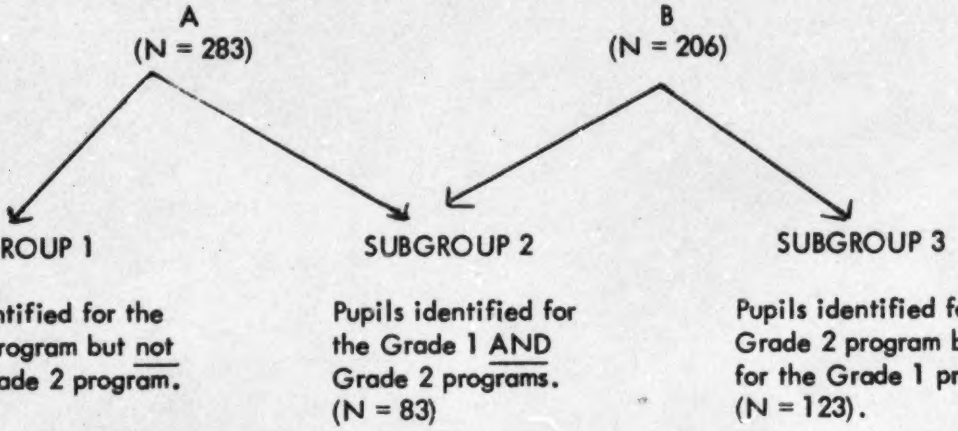
There are two major groups of identified pupils whose results are examined in the following sections:

A - 283 pupils identified for Grade 1 program in 1973 - 74 and for whom Grade 2 data are available.

B - 206 pupils identified for Grade 2 program in 1974 - 75.

These two groups may be divided into three subgroups as follows:

FIGURE 1


A
(N = 283)
B
(N = 206)
SUBGROUP 1
SUBGROUP 2
SUBGROUP 3
Pupils identified for the Grade 1 program but not for the Grade 2 program. (N = 200)
Pupils identified for the Grade 1 AND Grade 2 programs. (N = 83)
Pupils identified for the Grade 2 program but not for the Grade 1 program. (N = 123).

Of the approximately 460 pupils originally identified in 1973 - 74 at the beginning of Grade 1 and who participated in the spring testing in April, 1974 at the end of Grade 1, Grade 2 data were available for only 283. This group of pupils includes two subgroups:

Subgroup 1 - approximately 200 pupils who were identified in Grade 1 but whose performance had sufficiently improved that they were not considered as identified for the Grade 2 program.

Subgroup 2 - as outlined above, the 83 pupils identified in both Grade 1 and Grade 2

Of the 206 pupils who were identified for the Grade 2 program and from whom data were collected in May, 1975, 83 pupils were also part of the original cohort identified the previous year at the beginning of Grade 1, while the remaining pupils had not been identified previously.

The results which follow are discussed in terms of the two major groups and three subgroups as outlined above.

Reading Results

The results of the reading comprehension subtest for the two major groups of identified pupils and for the non-identified pupils are shown in Table 3.

TABLE 3

AVERAGE READING SCORES FOR IDENTIFIED AND NON-IDENTIFIED PUPILS

	Pupils Identified in Grade 1	Pupils Identified in Grade 2	Non-Identified Pupils
Average Raw Score (Maximum = 44)	18.8	17.2	28.3
Standard Deviation	8.7	8.3	11.0
Number of Pupils*	276	204	3111
Corresponding Grade Equivalent	2.0	1.9	2.8
Standard Deviation	0.6	0.5	1.0

* The reader will note that reading scores were not available for 7 of the 283 pupils identified in Grade 1 and 2 of the 206 pupils identified in Grade 2.

The expected grade equivalent for the time of testing (i.e. May) is 2.8. As is evident, the non-identified pupils, on the average, were performing at the expected level.

Pupils identified in Grade 1 obtained an average grade equivalent of 2.0, i.e. eight months below the expected, while pupils identified for Grade 2 obtained an average grade equivalent of 1.9, i.e. nine months below the expected. Thus pupils identified originally at the beginning of Grade 1 did slightly better, on the average, in reading than pupils identified for the Grade 2 program.

The reader will recall, however, that there is some overlap between these two major groups of identified pupils, i.e., the 83 pupils identified in both Grade 1 and Grade 2. Therefore, let us examine the results for the three subgroups outlined earlier in Figure 1. Average reading scores are shown in Table 4.

TABLE 4

AVERAGE READING SCORES IN GRADE 2
FOR THREE SUBGROUPS OF IDENTIFIED PUPILS

	Identified in Grade 1 but not Grade 2	Identified in Grade 1 and Grade 2	Identified in Grade 2 but not Grade 1
Average Raw Score	19.6	16.6	17.3
Standard Deviation	8.9	7.7	8.7
Number of Pupils	191	81	116
Corresponding Average grade equivalent	2.1	1.9	1.9
Standard Deviation	0.6	0.5	0.5

Subgroup 1, those pupils identified in Grade 1, but not identified in Grade 2, obtained significantly* higher reading scores, on the average, than either of the other two subgroups. Although the pupils in this group are still performing below the expected level (i.e. 2.8), they are doing slightly better than pupils who were identified for Grade 2.

Now that we have examined the Grade 2 performance in reading of the various subgroups of identified pupils relative to each other, let us determine the extent of growth in reading shown by these groups from Grade 1 to Grade 2.

In order to do so, raw scores were converted to normalized standard scores, called North York Scores. The North York Score scale has a range of 20 - 80 with a mid-point of 50.

Adjective Classification	Very low	Low	Low Avg.	Average	High Avg.	High	Very High
	7%	9%	15%	38%	15%	9%	7%

* Group 1 vs. 2: $t = 2.6$, $df = 270$, $p < .01$

Group 1 vs. 3: $t = 3.0$ $df = 305$, $p < .01$

The North York Score scale is based on equal intervals of 10 points along the range of performance in a given test. As the North York Scores form a normal distribution, one interval on either side of 50, i.e. 40 - 60, comprises the average range in which 68% of the pupils can be expected to score, while 16% of the pupils can be expected to obtain scores higher than 60 and 16% to obtain scores lower than 40.

When raw scores have been converted to North York Scores, the scores are made comparable. Test scores can then be compared from test to test, grade to grade and pupil to pupil.

Average North York Scores in reading obtained in Grade 1 and Grade 2 by the three sub-groups of identified pupils are shown in the following table.

TABLE 5

AVERAGE NORTH YORK SCORES IN READING IN GRADE 1 AND GRADE 2 FOR IDENTIFIED PUPILS

		Identified in Grade 1 but not Grade 2	Identified in Grade 1 and Grade 2	Identified in Grade 2 but not Grade 1
GRADE 1 1973-74	Average North York Score	44.0	39.8	40.9
	Standard Deviation	8.1	6.4	5.9
	Number of Pupils	179	74	109
	Corresponding North York Percentile	28	17	20
GRADE2 1974-75	Average North York Score	43.2	40.7	41.0
	Standard Deviation	7.3	7.0	7.8
	Number of Pupils	188	77	115
	Corresponding North York Percentile	27	20	20

An examination of Table 5 indicates that those pupils identified in both Grade 1 and Grade 2 have slightly improved their performance in reading from Grade 1 to Grade 2. In Grade 1, these pupils on the average were performing at the seventeenth percentile when compared to all other Grade 1 pupils, whereas in Grade 2, they are now performing at the twentieth percentile. The other two subgroups

- identified in Grade 1, but not 2
  and
- identified in Grade 2, but not 1

maintained their performance in reading from Grade 1 to Grade 2, relative to their peer group.

In summary, those pupils who were considered as identified for both the Grade 1 and Grade 2 programs, on the average were performing nine months below the expected grade equivalent in reading. When compared to their performance in reading at the end of Grade 1, these pupils as a group had shown a small improvement in performance.

Self Concept Results

The results of the Self Concept Inventory for the two major groups of identified pupils and for non-identified pupils are shown in Table 6.

TABLE 6

AVERAGE SELF CONCEPT SCORES FOR IDENTIFIED AND NON-IDENTIFIED PUPILS

	Pupils Identified in Grade 1	Pupils Identified in Grade 2	Non-Identified Pupils
Average Score (Maximum = 30)	16.5	16.1	18.8
Standard Deviation	5.2	5.2	5.5
Number of Pupils	283	206	3127

The results for non-identified pupils were significantly higher than for both groups of identified pupils ($t = 6.8, df = 3408, p < .01, t = 6.9, df = 3331, p < .01$), while the two groups of identified pupils obtained similar scores, on the average.

Now let us examine average self concept scores for the three subgroups of identified pupils (see Table 7).

TABLE 7

AVERAGE SELF CONCEPT SCORES FOR THREE SUBGROUPS OF IDENTIFIED PUPILS

	Identified in Grade 1 but not Grade 2	Identified in both Grade 1 and Grade 2	Identified in Grade 2 but not Grade 1
Average Score (Maximum =30)	16.8	15.3	16.7
Standard Deviation	5.0	5.5	4.9
Number of Pupils	196	83	116

It is evident that of the three subgroups, those pupils who were identified in both Grade 1 and Grade 2, on the average, have lower self concept scores than either of the other two sub-groups.

As was the case with reading, North York Scores were also calculated for self concept so that results from Grade 1 and Grade 2 could be compared.

Average North York scores in Self Concept obtained in both Grade 1 and Grade 2 by the three subgroups of identified pupils are shown in the following table.

TABLE 8

AVERAGE NORTH YORK STANDARD SCORES IN SELF CONCEPT
IN GRADE 1 AND 2 FOR IDENTIFIED PUPILS

		Identified in Grade 1 but not Grade 2	Identified in Grade 1 and Grade 2	Identified in Grade 2 but not Grade 1
GRADE 1 1973-74	Average North York Score	48.8	42.4	47.0
	Standard Deviation	8.9	9.9	9.7
	Number of Pupils	179	74	106
	Corresponding North York Percentile	48	21	39
GRADE 2 1974-75	Average North York Score	46.8	44.0	46.3
	Standard Deviation	8.7	9.5	8.3
	Number of Pupils	194	79	115
	Corresponding North York Percentile	38	30	35

Again, let us look first at those pupils identified for both the Grade 1 and Grade 2 programs. At the end of Grade 1, their average self concept score was at the 21st percentile, while by the end of Grade 2, their average self concept score was at the 30th percentile - indicating some improvement over the course of the year. Although their scores, on the average, are still lower than those for the other two subgroups, they have shown some improvement. Subgroups 1 and 3, on the other hand, have shown a slight decline in their scores from Grade 1 to Grade 2.

Summary and Conclusions

Those pupils who were identified for both the Grade 1 and Grade 2 programs on the average showed a small improvement in their reading scores from Grade 1 to Grade 2, as well as improvement in their self concept scores over the course of the year. Although their gains were small, it does seem that these pupils did benefit from continued assistance in Grade 1 through to Grade 2. Those pupils, however, who were not identified until the beginning of Grade 2 did not benefit as much during Grade 2.

Those pupils who were identified in Grade 1 and showed sufficient improvement that they were not identified for Grade 2, maintained their performance in reading, although they showed a slight decline in their self concept scores over the course of the Grade 2 year.

Several problems were evident during Intervention, 1974 - 75, the most prevalent of these being limited communication between the Intervention Committee and the Grade 2 teachers. Consequently, many Grade 2 teachers did not feel the sense of commitment and involvement that was felt the previous year by Grade 1 teachers. It is hoped that during the current school year when Intervention is being expanded to include Grade 3, that some of these problems will be rectified. The Intervention Committee is planning to hold workshops for all participating teachers and have already compiled a Handbook for Grade 3 teachers outlining guidelines and suggestions which teachers may find useful with their class.